

Loss Mitigation Grant Program

Wind Resistive Device (WRD) Product Evaluation

The product as described herein has been evaluated by the Department of Commerce and Consumer Affairs (DCCA) for compliance with the technical requirements for wind resistive devices installed in single or multi-family residential dwellings. Installation costs of approved products are partially reimbursable under the provisions of the Loss Mitigation Grant Program. The results of the product evaluation are presented in the following report.

1.0 Product Information

1.1 Product Name:

Southern Extrusions Extruded Aluminum Colonial Hurricane Shutter “Impact” (four panel)

1.2 Description:

The Colonial Hurricane Shutter is an extruded aluminum operable shutter designed to be permanently mounted to an exterior wall. The shutters bi-fold open or closed and can be latched to provide impact and wind pressure resistance to glazed openings. Four panel models have a maximum overall frame width is 77” and the maximum height is 88.87”.

1.3 Category:

Submitted for evaluation as a WRD option 3- Exterior opening protection

1.4 Submitted By:

Hawaii Security Shutters, Inc.
4309 Palahinu Place
Honolulu, HI 96818
Ph: (808) 422-0707
Fax: (808) 422-1311

- a. Manufacturer:
Southern Extrusion, Inc.
3401 West Navy Blvd.
Pensecola, FL 32505
- b. Technical Representative:
Tim Baughn
Ph: (850) 432-2485
seishutters@bellsouth.com
- c. Local Sales Representative:
T.R. Bongartz
Hawaii Security Shutters, Inc.
Ph: (808) 422-0707
Fax: (808) 422-1311

2.0 Product Evaluation

2.1 Wind Loads:

According to the sheet 1 of 7 of drawing No. FL-3669, the maximum allowable design pressure is +/-65 psf. Sheet 3 of 3 of product evaluation report FL-9102.1 states that this product has been tested for static and cyclic wind pressure loading in accordance with ASTM E330 and E1996. However, Section 4.0 of the Hawaii Department of Commerce and Consumer Affairs *Submittal Requirements for Product Evaluations* requires that minimum testing and test report information requirements be submitted for product approval. In this case no test information has been submitted, only a third party certification.

2.2 Impact Resistance:

Page 3 of 3 of Product evaluation report No. FL 9102.1 states that this product has been tested for missile impact under the provisions of ASTM E1996 and received a missile impact rating of "D". Although, this exceeds the missile impact level "C" required by the loss mitigation grant program, no test data has been submitted to substantiate the impact resistance rating of the Colonial Hurricane Shutter. Required documentation per Section 4.0 of the *Submittal Requirements for Product Evaluations* must be provided for WRD approval.

2.3 Installation:

Installation shall be performed strictly in accordance with the details indicated on sheets 1 through 7 of 7 of drawing No. FL-3669. A minimum separation of 3" between the Colonial Hurricane Shutter and the opening glazing is specified in the design drawings. For installation on wood frame construction the drawings specify that the wood must have at least an SG=0.55 or better. In Hawaii, typically Douglas fir lumber is used for frame construction and it has an SG=0.50.

2.4 Substantiating Data:

- a. Drawing No. FL-3669, titled "Southern Extrusions Extruded Aluminum Colonial Hurricane Shutter", sheets 1 through 7 of 7, prepared by Building Consultants Inc., signed and sealed by Wendell W. Haney, P.E. (FL License No. 54158) dated 6/20/2007
- b. Product Evaluation Report No. FL-9102.1, product name "Colonial Hurricane Shutter Extruded Aluminum "Impact"", sheets 1 through 3 of 3, signed and sealed by Walter Wendell W. Haney, P.E. (FL License No. 54158) of R W Building Consultants, Inc. 7/23/2007

3.0 Findings

Evaluation in review of the submitted data indicates that although the Colonial Hurricane Shutter as described in this report may conform to the requirements of the loss mitigation grant program, however at this time insufficient data has been submitted to approve this product as an acceptable WRD. The minimum testing and test report information required per Section 4.0 of the Hawaii Department of Commerce and Consumer Affairs *Submittal Requirements for Product Evaluations* must be submitted for further

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consideration. In addition, the drawings specify that attachments to wood structures must be of a higher grade wood than typically used in Hawaiian construction. Therefore, either approval of the product for use on Douglas Fir must be made or the structure must be retrofitted with a higher grade of wood. No anchorage details or test results have been provided for single wall construction common to Hawaii. Additional data must be submitted for WRD approved use on this construction type.

3.1 Limitations:

- a. The Colonial Hurricane Sutter is conditionally approved as an acceptable WRD under the requirements of the loss mitigation grant program, subject to these limitations:
- b. Minimum test report information must be submitted for final verification.
- c. Submit additional details and test data for approved use on single wall construction.
- d. Provide alternative or approved connection schedule for product use on Douglas fir wood framing members.
- e. Design wind loads for product installation shall be determined in accordance with ASCE 7-05. On Oahu, exposure, directionality and topographic factors shall be per the Honolulu Building Code.



Gary Y. K. Chock, S.E.
Product Examiner
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